

**STATUS OF THE CLAIMS**

1. (currently amended) A system, comprising:
  - a) a sample,
  - b) data obtained from an MRI device, wherein said data comprise at least one pair of consecutive in-phase and out-phase echoes of said sample collected and reconstructed into images in magnitude format, and
  - c) software embodied on a computer readable medium, wherein said software is configured to receive said data obtained from said MRI device, wherein said data comprise at least one pair of consecutive in-phase and out-phase echoes of a sample collected in magnitude format, wherein said software is further configured to process said at least one pair of consecutive in-phase and out-phase echoes to generate reconstructed images in magnitude format, wherein said processing comprises determining the percent of fat content within said sample as between 0 to 100%, wherein said software is further configured to display said determined fat percentage within said sample.
2. (original) The system of Claim 1, wherein said sample is selected from the group consisting of a human head and neck, a human chest, a human abdomen, a human pelvis, and a human extremity.
3. (original) The system of Claim 1, wherein said sample is a human liver.
4. (original) The system of Claim 1, wherein said sample is abnormal tissue or lesion.
5. (original) The system of Claim 1, wherein said data obtained from said MRI device comprises:
  - a) at least one image obtained with a low flip angle; and
  - b) at least one image obtained with a high flip angle.
6. (original) The system of Claim 5, wherein said low flip angle setting is 20 degrees.

7. (original) The system of Claim 5, wherein said high flip angle setting is 70 degrees.
8. (previously presented) The system of Claim 1, wherein said MRI device is configured to analyze a clinical pulse sequence, wherein said clinical pulse sequence comprises a corrected  $T2^*$  NMR relaxation effect value, wherein said corrected  $T2^*$  NMR relaxation effect value is obtained through processing consecutive in-phase sample echoes or consecutive out-phase echoes of said sample.
9. (original) The system of Claim 8, wherein said processing consecutive in-phase sample signals or consecutive out-phase signals of said sample comprises application of an equation selected from the group consisting of:
- $$\begin{aligned} \text{Sin-phase\_}T2^* \text{corrected} &= \text{Sin-phase1} \bullet \sqrt{\text{Sin-phase1} / \text{Sin-phase2}}; \text{ and} \\ \text{Sin-phase\_}T2^* \text{corrected} &= \text{Sin-phase1} \bullet \sqrt{\text{Sout-phase1} / \text{Sout-phase2}}; \text{ and} \\ \text{Sout-phase\_}T2^* \text{corrected} &= \text{Sout-phase1} \bullet \sqrt{\text{Sin-phase1} / \text{Sin-phase2}}; \text{ and} \\ \text{Sout-phase\_}T2^* \text{corrected} &= \text{Sout-phase1} \bullet \sqrt{\text{Sout-phase1} / \text{Sout-phase2}}. \end{aligned}$$
- 10-18. (canceled)
19. (previously presented) A method of generating a percentage of fat within a sample, comprising using the system of Claim 1, and displaying said percentage of fat within said sample.
20. (canceled)